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Re: FR Doc. 2011-28623

On behalf of the Professional and Scholarly Publishing Division of the Association of American Publishers ("AAP/PSP") and the DC Principles Coalition for Free Access to Science ("Coalition"), we are pleased to respond to the Office of Science and Technology Policy's ("OSTP") November 3, 2011 Request for Information ("RFI") regarding "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research."

Scholarly and professional publishers create the vast majority of materials used in the U.S. by scholars and professionals in science, medicine, technology, business, law, reference, social science and the humanities, and they include the worldwide disseminators, archivists, and shapers of the public record on scientific research via print and electronic means. They include non-profit professional societies, commercial publishers and university presses that produce books, journals, computer software, databases and electronic products in virtually all areas of human inquiry and activity.

Collectively, members of AAP/PSP and the Coalition represent tens of thousands of publishing employees, professional individuals, editors and authors throughout the country who regularly contribute to the advancement of American science, learning, culture and innovation. They comprise the bulk of an \$8 billion commercial and non-profit publishing industry that contributes significantly to the U.S. economy and enhances the U.S. balance of trade by at least \$3.5 billion annually.

The primary goal of the peer-reviewed publishing activity undertaken by our members is to broadly disseminate, provide access, and offer a high-quality and user-friendly environment in which to discover, analyze, and link to the latest breakthroughs and developments in scientific and other scholarly research. In particular, publishers of scientific journals have, for more than 100 years, played an integral role in building and documenting the unrivalled U.S. scientific research enterprise, and their continuing innovation and investment in high-quality publication of scientific research makes them uniquely positioned to help the Federal Government expand public access to publications that report on the results of federally-funded scientific research; ensure the long-term stewardship of such publications; and, support the innovation and economic development that is derived from scientific discovery.

However, as a threshold matter in contemplating how publishers might work cooperatively with the Federal Government to advance its abilities to provide greater public access to the results of federally-funded research, it has become necessary for publishers to pointedly remind the Federal Government that their “peer-reviewed scholarly publications” that report, describe, explain, analyze or comment on federally-funded research do NOT “result from” such research in any sense that can legally justify the assertion of Federal Government control over the contents or distribution of such publications. Although federal funding may facilitate or otherwise contribute to the research processes and discoveries that are the subjects of peer-reviewed articles published in scientific journals or other scholarly publications, the creation of the articles themselves – as well as the creation of the publications containing them – are separate creative acts. Activities including certifying quality control; improving accessibility; ensuring integrity, reliability, and provenance; enabling discovery; promoting global dissemination and collaboration; standardizing outputs; and preserving the scholarly record for future generations are not funded by or otherwise attributable to the Federal Government. Instead, such articles and publications are literary works that are subject to the rights of copyright ownership that belong to their authors or their authors’ exclusive licensees, which are typically the publishers who have provided significant added-value to the work through extensive pre-publication editing and style processes that include peer review.

Unfortunately, the Federal Government’s use of terminology that characterizes scientific journals, their constituent articles, and other “scholarly publications” as “the results of” or “resulting from” federally-funded research has been a fundamental premise for making its case to assert claims to control or, at least, exercise some authority over these materials in conflict with the rights and interests of their authors and publishers. Through sheer repetition, variations of such characterizations have recently shaped the official discussion of key policy issues involved in seeking to expand “public access to the results of federally-funded research”

by creating the perception that federal taxpayers and, thus, the Federal Government have somehow paid for the creation of such publications and thereby obtained rights of free public access to them. This premise undermines the publishing community's desire and ability to work cooperatively with the Federal Government to achieve expanded public access, and it must be addressed by OSTP if such cooperation is to become a part of the development and implementation of appropriate public access policies based on the response to the RFI.

It is with this view that the attached comments and recommendations have been submitted on behalf of AAP/PSP and the Coalition in the hope that they will help to facilitate the successful development of a sustainable, effective and fair public access policy that is consistent with the Administration's "Open Government" framework¹ and embodies a spirit of collaboration in recognition of the intellectual property rights and private investments of publishers as key stakeholders in these matters.

Summary of Comments and Recommendations

Scholarly publishers have long served as integral hubs of the America's research enterprise, validating research through the peer review process, producing a reliable scientific record, and facilitating scholarly communication through dissemination and preservation of scientific literature. Contrary to the premise of this RFI, these publications are not funded by research grants, but provide an independent analysis and interpretation of those results. Nonetheless, the mission of the publishing industry is to expand the availability and utility of research findings, by providing materials that analyze and interpret the latest developments in social and scientific research, and they will continue to partner with all stakeholders, including federal agencies, to ensure broad access to cutting-edge discoveries.

Publishers have a solid record of providing long-term stewardship and broad public availability of publications that report on, analyze and interpret federally-funded research. In the digital age, publishers have invested significantly in activities that have enhanced public access, particularly for the scientific, technological, engineering social science, and medical communities: expanding accessibility, improving interoperability and fuelling innovation. Their investments have created digital platforms with the latest and continually evolving Web capabilities, providing researchers with faster and more robust delivery of scholarly information, new ways to present data and research findings and links that enable information to be found and navigated with ease. They have improved interoperability through new metadata standards and pilot projects, which are driving innovation and providing for better information discovery and expanded use of research results. They have voluntarily created

¹ As articulated in Memorandum for the Heads of Executive Departments and Agencies on Transparency and Open Government (January 21, 2009), available at http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment and Memorandum for the Heads of Executive Departments and Agencies on Open Government Directive available at <http://www.whitehouse.gov/open/documents/open-government-directive>

programs, including Research4Life, patientINFORM and the Emergency Access Initiative, to enable people outside the traditional circles of scholarly research to have access to critically important information when and where they need it.

Publisher activities and investments over the last 15 years have contributed to U.S. economic growth directly through the high-skilled workers they employ, as well as through the dissemination of knowledge that leads to innovations beneficial to the safety and health of all Americans. The core publisher activities of improving the quality of an author's work by supporting peer review and performing technical editing; ensuring the continued integrity and reliability of the scholarly record and certifying the provenance of ideas through peer-reviewed journals; enhancing the global accessibility of this material for a variety of uses to specialist and non-specialist audiences; enabling the discovery of knowledge through innovative web-based platforms, tools and interlinked content; promoting online collaboration through social networking tools; enabling the global dissemination of information in standardized formats; and preserving the scholarly record for future generations entail significant costs and ongoing investment. These activities are threatened by public access policies that do not take these costs into account. In considering policies that could potentially expand public access to research results, it is critically important that any new policy does not damage the private institutions on which the Federal Government and its scientific enterprise depend. In particular, AAP/PSP and the Coalition oppose government mandates requiring that private-sector publications be made available online without the copyright owner's authorization and compensation. Such unnecessary and harmful mandates jeopardize the sustainability of the U.S. professional and scholarly publishing enterprise which is considered by the vast majority of scientific researchers to be first-rate and which helps ensure U.S. leadership in research and knowledge-based innovation. Sustainable partnership with publishers is the best way to continue supporting the U.S. economy, a robust peer-review publishing system, and the productivity of the scientific enterprise.

The America COMPETES Reauthorization Act of 2010 calls upon OSTP to coordinate agency policies related to the dissemination and long-term stewardship of the results of federally funded unclassified research. We strongly support this goal, as well as the guiding principles of transparency, participation and collaboration that President Obama and OMB Director Orszag articulated at the outset of this Administration. The America COMPETES Act of 2007 provides a constructive model of a public access policy in its directive to the National Science Foundation (NSF)² that could serve as a basis for further collaboration between the federal agency, researchers, and other stakeholders. In contrast, the NIH "public access" policy, which has been authorized through the Congressional appropriations process without consideration by Congressional committees with subject matter jurisdiction, has the potential to significantly damage a well-functioning and innovative system of scientific communication, reduce

² Section 7010, "Reporting of Research Results," described by the conferees as "requiring NSF to make available to the public in electronic form final project reports and citations to NSF-funded research." The conferees further noted that they "intend for NSF to provide to the public a readily accessible summary of the outcomes of NSF-sponsored research projects. In addition to citations to journal publications, the conferees intend for NSF to make available research project summaries, not including any proprietary or otherwise sensitive information.

economic benefits and employment, and undermine intellectual property rights. Each of these models should be carefully analyzed to be sure its long-term impact on all stakeholders is fully understood, with appropriate consideration of the different needs and practices of different scientific disciplines.³

A federal agency public access policy that is sustainable in the long-term and maximizes benefits to researchers and the public at large must function as a balanced public-private partnership to enhance access and interoperability, adequately protect fundamental intellectual property rights guaranteed under the Constitution, and respect proprietary contributions of added-value to ensure sustained private investment in innovation. This approach meets the needs of the research community in particular by relying on evidence-based assessments and providing access to taxpayer-funded research results through both public and private channels.

Responses to specific questions

(1) Are there steps that agencies could take to grow existing and new markets related to the access and analysis of peer-reviewed publications that result from federally funded scientific research? How can policies for archiving publications and making them publically accessible be used to grow the economy and improve the productivity of the scientific enterprise? What are the relative costs and benefits of such policies? What type of access to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?

U.S. publishers serve a robust, innovative market for peer-reviewed publications around the world that has led to multiple opportunities for access to and analysis of research across a broad array of social and scientific disciplines. These publications are not the result of research, but rather describe, explain or report on such research. They thus represent significant value beyond whatever initial investment in research the Federal Government provides. Their role in interpreting, analyzing and validating research results therefore adds increased knowledge and utility of research, whether federally funded or otherwise.

Since the mid 1990s, publishing industry investments in the dramatic digital revolution in the sciences have increased the utility of published resources even more, increasing productivity, expanding availability, and increasing the economic impact of scientific discovery. The results of the end-to-end digitization of publishing systems are robust digital platforms with the latest and evolving Web capabilities that can support the Federal Government's effort to link policymakers, researchers and the public. Rapid innovation in the journal publishing industry has dramatically improved functionality and efficiency for doctors and researchers, who can now perform complex searches of journals, immediately retrieve and print full text articles, link instantly to other cited articles, export text to other databases and programs and receive e-mail alerts when new journal issues are released. Voluntary cross-publisher initiatives such as

³ See, for example, data presented in response to Question 8 regarding journal use in Psychology and Mathematics.

CrossRef,⁴ developed without government funding, have continued the trend of investments that benefit researchers.

These investments have helped to grow the economy and improve the productivity of the scientific enterprise. The portion of time scientific researchers spent analyzing, as opposed to gathering, information increased dramatically from 2001-2005. Compared to the print-only era, scientists now read 25% more articles per year from almost twice as many journals, and they do so using a smaller portion of their time.⁵ The system is already working to provide needed access and improve productivity. This dynamic yields major benefits in research and funding effectiveness. Existing publisher activities also support U.S. economic growth through technology and innovation.

Publishers are willing and able to work with all stakeholders to address existing or future gaps in access. Agencies should identify specific needs of particular user groups that are not already being met and collaborate with publishers and other stakeholders to meet those needs most effectively. Researchers, the general public, funders, stakeholder groups such as patients and doctors and others each have different information requirements. To make it easier to locate and use research information, publishers have and continue to make substantial investments in efforts to improve and expand access to information. These include:

- Identifying and addressing access gaps for particular groups with a need for information, through initiatives that provide direct access to communities with these needs. Such initiatives include patientINFORM,⁶ the Emergency Access Initiative,⁷ Research4Life,⁸ DeepDyve rentals,⁹ and special access programs for public libraries, journalists and high schools.
- Creating, supporting and maintaining robust hardware and software infrastructures to distribute and archive science research literature, and updating those tools as the needs and expectations of authors and users of journal literature change over time.
- Enabling researchers to interact with the literature and data in new ways, including enabling data manipulation and supporting the dissemination of supplemental

⁴ CrossRef (www.crossref.org), a not-for-profit group founded by publishers in 2002, addresses a research community need for citation-linking and standardization of identifying metadata. Almost 1000 publishers participate and have assigned digital object identifiers (DOIs) to more than 50 million published content items. Development of the CrossRef service has resulted in seamless navigation of the research literature by users so that researchers using the bibliography in one article can link from a reference to the full text of the referenced article.

⁵ Outsell's Buyer Market Database, Dr. Carol Tenopir (2008)

⁶ patientINFORM (<http://www.patientinform.com/>) provides patients and their caregivers with free or reduced-price access to relevant journal articles.

⁷ The Emergency Access Initiative (EAI) is collaboration between NIH, libraries, and publishers to provide temporary free access to full text articles from major biomedicine titles to healthcare professionals, librarians, and the public affected by disasters.

⁸ Research4Life (www.research4life.org) is the collective name for four programs that provide developing countries with free or low cost access to academic and professional peer-reviewed content online.

⁹ DeepDyve (www.deepdyve.com) aggregates published information and makes it available through low cost rental to improve access for users who are "unaffiliated" with a large institution and therefore lack easy and affordable access to authoritative sources of information.

information such as video, interactive three-dimensional visualizations and software tools that enhance understanding of research results.

- Verifying references and creating, managing and maintaining online links, providing coding for digital dissemination, integrating machine-readable tags, supporting reference linking and indexing, and otherwise enriching the content, design and functionality of online publications.
- Encouraging and supporting the development of interoperable, industry-standard tools for citation and other purposes, such as “persistent identifiers” (that is, the articles’ unique identifiers for researchers to ensure that they are using and citing the authoritative version of the article).
- Enhancing the discoverability of research results through arrangements with third-party vendors that push relevant research information to the appropriate research communities through a combination of traditional tools and emerging technologies, such as abstracting and indexing services, citation databases, table-of-contents alerting services, podcasts, RSS feeds, press communications and sponsorship of scientific and technical conferences, seminars and symposia.

In addition to working in collaboration with publishers to identify access gaps, agencies could work proactively to broaden access to materials that analyze and interpret research for scientists and the public without appropriating private, copyrighted content. Options include:

- Working to develop standards for data and meta-data to make research more readily searchable and discoverable: publishers are already working in partnership to develop standardized information and collections through initiatives like CrossRef;
- Working with researchers and other stakeholders to create appropriate policies to make the Federal agency-collected and maintained outputs of taxpayer-funded research, such as grant reports and research progress reports, freely available to the public;¹⁰
- Making funds available to support payment for open access to published articles. Several research funders already do this (Howard Hughes Medical Institute, The Wellcome Trust, Max-Planck Institutes); and,
- Licensing content from publishers to make available to specific audiences. Publishers license content to customers of many kinds, and can generally customize those licenses to meet specific or specialized user needs, including those of government agencies, and have the ability to ensure the availability of their content with existing infrastructure.

The primary way that the government can achieve greater accessibility for peer-reviewed publications is to work in a collaborative manner with all stakeholders to develop an approach

¹⁰ This would ensure readability to the broadest audience. NSF is already pursuing such a policy: <http://www.nsf.gov/pubs/policydocs/porfaqs.jsp>

that balances competing interests, ensures the rights of copyright owners, and provides for continued growth and innovation in scientific communication. It is critical that agencies avoid any action or policy change that would detract from a well-functioning, privately-funded publishing ecosystem that is driving innovation and growing existing and new markets that support the scientific enterprise. Public access government mandates run counter to openness and collaboration, and have significant costs to the U.S. economy and the scientific enterprise. Indeed, such moves would lessen access, as they would threaten publishers' ability and willingness to improve availability of their works. Significant value added by the publishing industry could be eliminated if revenue channels necessary for publishers to reinvest in their businesses and innovations continue to be threatened by government mandated access policies that provide free access to publishers' works and enable piracy and unauthorized reuse.

The NIH public access policy provides a cautionary tale about the risks of government mandates requiring access to manuscripts of peer-reviewed science journal articles. Although the mandate is still relatively young and needs to be analyzed more fully, our members report declining sales and usage since the mandate went into effect. AAP/PSP and the Coalition join others¹¹ in the concern that the NIH policy may undermine U.S. competitiveness and negatively impact U.S. jobs. It is critical that the government carefully analyze the full impact of the NIH policy on all stakeholders before expanding it to any other agencies. There has not been any comprehensive study of its impact on members of the general public, its assumed beneficiaries, or on journal publishers whose work, reputation and expertise it exploits.

It is not clear how much the public is benefiting from this mandate. In surveys, researchers do not rate access as a significant problem¹² and, while it is difficult to get usage data from NIH, the scant public data available indicates that the mandate may be benefiting individuals outside of the U.S. (including those who are otherwise customers or competitors of U.S. enterprises) more than Americans. For example, two-thirds of PubMedCentral's users are based outside the U.S., which undermines critical export opportunities for an \$8 billion publishing industry that employs tens of thousands of Americans.

At the same time, indications of harm are just emerging, and substantial evidence may not be available until it is too late. The NIH free access mandate has been in existence for less than three years. Taking into account the one-year embargo, there has been very little time for the full impact on publishers to be felt. However, there is no doubt that it is difficult for publishers to compete with free access, as would be the case for any business or industry; moreover, there

¹¹ House Energy and Commerce Committee Subcommittee on Health Chairman Joe Pitts sent a [letter to Francis Collins, NIH Director](#) expressing concern that the NIH Public Access Policy undermines the competitiveness of STM journal publishers, and seeking additional information on the NIH Public Access Policy, PubMedCentral, and its impact on the science, technology and medical publishing fields.

¹² Access to journal articles is only 14th on researchers' lists of concerns, behind lack of funding (1st) and too much bureaucracy (5th), according to survey results reported in "Access by UK small and medium-sized enterprises to professional and academic information," Mark Ware Consulting Ltd for Publishers Research Consortium (April 2009)

are a number of factors that point to likely harm. If we wait for the tipping point where publishers start failing, it will be too late to reverse unwise policies.

In 2006, the Publishing Research Consortium (PRC) commissioned a study of how decision-making factors such as price, embargo period, article version and reliability of access would affect librarians' subscription or cancellation behavior.¹³ With a twelve-month access delay, assuming only 40% of a journal's content would be available for free, a large proportion (44%) of librarians in the study said they would opt for free content to portions of the journal over a paid subscription. When more than 40% of a journal's manuscripts are available freely on open access, the librarians expressed an even greater preference for the free option over journal subscriptions. As subscriptions account for approximately 90% of revenue for many journal publishers, cancelled subscriptions represent a significant threat to the publishing enterprise. The results of the PRC study are worthy of serious consideration, given the importance of subscriptions to sustaining publishing's essential role in ensuring the integrity, dissemination and preservation of the world's scientific, technical and medical information.

(2) What specific steps can be taken to protect the intellectual property interests of publishers, scientists, Federal agencies, and other stakeholders involved with the publication and dissemination of peer-reviewed scholarly publications resulting from federally funded scientific research? Conversely, are there policies that should not be adopted with respect to public access to peer-reviewed scholarly publications so as not to undermine any intellectual property rights of publishers, scientists, Federal agencies, and other stakeholders?

Strong intellectual property protections underpin sustained investment in innovation, and we appreciate OSTP's acknowledgement that policies must not undermine these protections. Copyright is an essential ingredient in promoting creativity, innovation and the continued integrity and reliability of the scholarly record. Any agency policy must take as its starting point the goal to adequately protect fundamental intellectual property rights, respect value-adding publisher contributions, and uphold long-established principles of government information policy to ensure continued incentives for creativity and investment. In the publishing industry, copyright has provided an incentive for investments in new technologies and publishing models that meet the needs of today's digitally-based users, as well as continued peer review and infrastructure needed to publish and distribute scientific communication. As the technology for disseminating works has changed and increased, so have the investments publishers have made to meet new user demands. Therefore, the need for investment incentives has become even more crucial for the publishing industry.

To preserve these investment incentives, Federal policy must provide for full copyright owner authorization and compensation for access to these works. A sustainable approach would support the continued operation of various models of publishing to ensure access to innovation

¹³ Publishing Research Consortium Report "Self-Archiving and Journal Subscriptions: Co-existence or Competition" (July 2006). Accessible at http://www.publishingresearch.org.uk/documents/Self-archiving_report.pdf.

and researchers' ability to publish in the venue of their choice. Federal policy should also take specific steps to ensure that copyrighted materials are protected from unauthorized dissemination and piracy. An unintended consequence of the NIH Public Access Policy as it affects publishers' and authors' rights appears to be an increase in the rise of piracy of U.S. scientific and scholarly journal articles globally. The NIH policy puts the onus on rightsholders to police violations of intellectual property enabled by PubMedCentral (PMC). Chinese companies have been acquiring electronic copies of copyrighted U.S. scientific journal articles from government and university libraries and reselling them through online websites to legitimate producers' primary customers. U.S. publishers and scientific societies are facing annual losses of \$80-100 million as a result of this expanding theft and have been working closely with the Office of the U.S. Trade Representative and U.S. Department of Commerce to address this egregious problem.¹⁴ Chinese pirate companies may also be mining full text articles from NIH websites and reselling these articles to their subscribers.¹⁵ Unfortunately, these Chinese entities are now relying on a U.S. government website to facilitate the theft of U.S. intellectual property.

Alternatives to the NIH policy are available to disseminate federally-funded research findings without undermining Constitutionally-protected intellectual property rights and harming American competitiveness. As noted earlier, peer-reviewed publications are intellectual property analyzing and interpreting scientific discoveries and go far beyond simply providing the results of research. The goal stated in the America COMPETES Act, improving *"the dissemination and long-term stewardship of the results of unclassified research, including digital data and peer-reviewed scholarly publications, supported wholly, or in part, by funding from the Federal science agencies,"* can be better achieved through open access to final research reports, which are required under the Federal Acquisition Regulations. The reports summarize the research results, not all of which necessarily end up in any peer-reviewed publication. This solution could lead to standardization of the information reported,¹⁶ as well as rapid and broad dissemination of the government-funded materials even before publication of a peer reviewed article, all while preserving intellectual property. In fact, the original America COMPETES Act contains a mandate for the National Science Foundation to publish all research reports, and the Department of Energy already has such a policy. By providing for some form of research report to be published, rather than asserting a type of eminent domain over the peer-reviewed journal article, the government could ensure access to the results of federally-funded research without undermining intellectual property and the incentives for investment in scholarly communication.

¹⁴ 2009 U.S.-China Joint Commission on Commerce and Trade (JCCT) Factsheet. Available at <http://www.ustr.gov/about-us/press-office/fact-sheets/2009/october/us-china-joint-commission-commerce-and-trade>

¹⁵ One example is available here <http://l6.omcg.net/>

¹⁶ Some agencies may want to establish a template for certain kinds of reports so as to facilitate various kinds of aggregate meta-analysis.

(3) What are the pros and cons of centralized and decentralized approaches to managing public access to peer reviewed scholarly publications that result from federally funded research in terms of interoperability, search, development of analytic tools, and other scientific and commercial opportunities? Are there reasons why a Federal agency (or agencies) should maintain custody of all published content, and are there ways that the government can ensure long-term stewardship if content is distributed across multiple private sources?

Publishers are committed to promoting interoperability, search, development of analytic tools, and other scientific and commercial opportunities.¹⁷ A competitive publishing environment of not-for-profit and for-profit organizations – all of whom must receive a return on investment to survive – has led to robust technology development in scholarly publishing during the past 20 years. This sector of the publishing community, which includes professional associations, commercial publishers and university presses, moved quickly and decisively to introduce new technologies that meet researchers' demands for faster and more user-friendly delivery of scholarly information. For example, over the past decade publishers developed the Digital Object Identifier (DOI), a unique code for each piece of content in a scholarly publication.¹⁸ In partnership with stakeholders, publishers are continuing to innovate in the creation and standardization of metadata to make it easier for researchers and the public to find and use scientific research information. Publishers collaborated with librarians and database providers to establish COUNTER (Counting Online Usage of NeTworked Electronic Resources)¹⁹ which has produced an international set of standards and protocols governing the recording and exchange of online usage data. This enables libraries to better understand how the digital collections are being used and it allows publishers to better understand the usage patterns of their digital content. Additionally, Internet search engines, abstracting services and other tools do an excellent job of ensuring the discoverability of research, and innovations in this area are happening every day without government interference. There is no reason to doubt that the publishing industry will continue providing innovative products and services, unless the sustainability of private-sector publishing is undermined by harmful policies.

Centralized government-controlled custody of publications carries significant risks to the scientific enterprise, impedes innovation and is potentially unsustainable. Long-term stewardship of content carries significant costs that are already being borne by the private sector. In an era of dwindling federal resources, central federal repositories are duplicative and an unnecessary expense and recurring burden that may not be viable for long-term stewardship. Federal agencies are not always aware of existing technologies and solutions in the marketplace, resulting in unnecessary spending and a misallocation of taxpayer dollars—

¹⁷ See question 5

¹⁸ CrossRef, a not-for-profit group founded by publishers in 2002, maintains 50 million items. Almost 1000 publishers participate and assign DOIs to published content items. Development of the CrossRef service has resulted in seamless navigation of the research literature by users so that researchers using the bibliography in one article can link from a reference to the full text of the referenced article.

¹⁹ COUNTER (www.projectCOUNTER.org) is a nonprofit devoted to the continued improvement of online usage statistics and usage-based metrics. The COUNTER Codes of Practice provide an international set of standards and protocols governing the recording and exchange of online usage data to enable librarians and publishers to better understand information usage.

particularly when the Government duplicates and competes with products and services provided by the private sector. For example, the NIH did not proactively seek collaboration with journal publishers as it developed its procedures and policies for the deposit of NIH-funded researchers' manuscripts into its central repository. Consequently, NIH created an unnecessary separate archive and tagging system at considerable expense and with minimal interoperability with existing data repositories.

The 2009 Scholarly Publishing Roundtable Committee, convened by the House of Representatives Committee on Science and Technology in coordination with OSTP, reviewed the question of centralization carefully. In its *Report and Recommendation from the Scholarly Publishing Roundtable*, it said, "Decentralization is critical to achieving this goal, [i.e. interoperability] especially with respect to interdisciplinary research...the standards and tools adopted by NIH, which effectively support interoperability within PubMed Central, do not provide broad interoperability with external databases, which are growing in number and size."

Centralized management unnecessarily picks winners and losers, being necessarily limited to articles with federally-connected authorship and providing a top-down infrastructure and architecture. With multiple sources of scholarly publications, many of which analyze and interpret research that is not funded by the government, partnerships among stakeholders are essential for achieving effective access to literature that represents the latest scholarly discoveries. In addition, a centralized, governmental approach will minimize scientific and commercial opportunities by reducing potential traffic to innovative new applications that facilitate the work of researchers. Instead, AAP/PSP and the Coalition strongly encourage collaboration with industry and recommend that the Federal Government leverage the private sector's rapidly evolving expertise, technologies, products and services in order to efficiently and effectively improve the quality and scope of services available to the public.

(4) Are there models or new ideas for public-private partnerships that take advantage of existing publisher archives and encourage innovation in accessibility and interoperability, while ensuring long-term stewardship of the results of federally funded research?

Publishers are actively working with federal research agencies and other stakeholders to develop and implement multiple collaborative projects that will enhance the public access, utility and preservation of materials that report on and analyze and interpret federally-funded research. These include providing access to progress reports, scholarly publications or additional data for use by both the research community and the general public. With decades of experience innovating, providing long-term archives and promoting interoperability in response to evolving technology and user needs, publishers are uniquely positioned to partner with the federal government to expand accessibility and interoperability while ensuring long-term stewardship of the scholarly record. Such collaborations and innovations require continued funding for the value-added work of publishing.

Examples of successful public-private partnerships that are underway abound, but the projects below provide examples of the type of collaboration that has the most promise to achieve the desired results. Some additional examples are provided in response to Question 5, focusing particularly on interoperability and metadata.

- **Linking to/from research reports.** A trial project linking DOE reports on the science.gov site with related publications on the Wiley Online Library is underway, and similar trial projects are under discussion between DOE-OSTI and ACS and Elsevier. The American Mathematical Society is working on a project to enable better linkages between its abstracting services, federal grant reports and published articles. Such projects would result in interoperability between funder and publisher content, ensuring access and better reporting on the results of funding.
- **NSF pilot projects.** Several pilot project examples offered by publishers to NSF are being considered as a basis for continuing discussions on collaborative efforts between NSF and the scientific publishing community. These projects include the development of standards and persistent identifiers to enhance the discoverability of NSF-funded research results and to promote interoperability among the NSF, publisher and any third party databases and platforms. AAP/PSP and the Coalition are hopeful that these can provide a sustainable way forward to leverage publisher content and expertise to improve access and interoperability.
- **Sponsored access to published research.** Scholarly publishers are committed to the widest possible dissemination of and access to the content they publish. A pilot project could investigate the viability of dedicated funding to sustainably support open access to peer-reviewed material upon publication. Such an approach would provide access while continuing to support the important value-added contributions of publishers.

Ongoing collaboration has the potential to significantly advance the achievement of joint objectives related to the dissemination and long-term stewardship of research results, regardless of how the original research was funded.

(5) What steps can be taken by Federal agencies, publishers, and/or scholarly and professional societies to encourage interoperable search, discovery, and analysis capacity across disciplines and archives? What are the minimum core metadata for scholarly publications that must be made available to the public to allow such capabilities? How should Federal agencies make certain that such minimum core metadata associated with peer-reviewed publications resulting from federally funded scientific research are publicly available to ensure that these publications can be easily found and linked to Federal science funding?

Publishers are dedicated to the widest possible dissemination and discoverability of publications that analyze and interpret research. Federal agencies are not always aware of existing technologies and solutions in the marketplace, resulting in unnecessary spending and a misallocation of taxpayer dollars. Agencies should make certain that they are working in

collaboration with stakeholders to advance innovation in areas such as metadata and standards. As noted above, partnerships with industry are already underway to determine, develop, and include appropriate metadata in publications. Voluntary private-public collaboration is the best way to promote innovation and prevent federal duplication and competition with products and services provided by the private sector that are so critical to the U.S. economy.

There are several models for collaboration on standards and persistent identifiers to enhance the discoverability of publications that analyze and interpret government-funded research and to promote interoperability among the funding agencies, publishers and any third party databases and platforms. Federal agencies should work to standardize and facilitate metadata connected with publications that analyze and interpret government-funded research. Publishers are already collaborating with agencies to create a pilot initiative to clearly indicate the funding agency responsible for the research described and analyzed in a scholarly publication or an associated dataset, expanding the availability of information by linking grant awards to a variety of access options on the publishers' site. Working with the publishing community to gather and link this information will save agencies considerable effort and expense compared with producing or maintaining such information or services on agency websites. In searching for a particular author, name ambiguity and attribution are persistent, critical problems embedded in the scholarly research ecosystem. The Open Researcher & Contributor ID (ORCID) project (www.orcid.org) is a successful public-private partnership with 275 participating organizations,²⁰ funded by \$2M in loans from publishing partners and building on successful investments by publishers in the past. A pilot demonstration began earlier this year and is on schedule, and institutional IDs will be addressed in a second stage. Finally, agencies should build on partnerships that already exist to promote the identification, discoverability and archiving of data, including Datacite (www.datacite.org) and the NISO/NFAIS Working Group on Supplementary Journal Information (www.niso.org).

Private-public partnerships could also be used to develop discovery tools to facilitate journal content mining, dark archive access, and improvements in data management. For example, for many years publishers have produced and archived data-specific journals, and they are maintaining and updating such data sets with DOIs and semantic tagging. There are also many examples of pilot projects on data management.²¹ In addition, new content mining projects could be developed as collaborations between publishers and federal funders. Publishers are already working on projects to mine journal and book content²² and it might be helpful for federal funders to develop a content mining demonstrator to illustrate the value of content

²⁰ 15% from publishing, 40% from academia and 15% from industry

²¹ These include an NSF project under consideration (IOS-1127112) on data management in the biosciences that involves a partnership with a publisher in the field of plant biology; discipline-specific archive (Dryad.org) for biology data which allows authors to archive data used in peer-reviewed articles for a nominal fee; American Astronomical Society (AAS) is pursuing the establishment of a universal astronomy-specific data repository based on the Dryad model, by engaging all major publishers of astronomical journals; etc.

²² The Publishers Research Consortium recently completed [a study](#) on article-level content mining based on a broad survey of ongoing or planned activities among nearly 30 STM publishers or associations.

mining to the broader scientific community. Federal agencies should work with publishers and other stakeholders who have expertise in developing and promulgating metadata to ensure standardization across disciplines and share best practices.

(6) How can Federal agencies that fund science maximize the benefit of public access policies to U.S. taxpayers, and their investment in the peer-reviewed literature, while minimizing burden and costs for stakeholders, including awardee institutions, scientists, publishers, Federal agencies, and libraries?

Government should take reasonable steps to maximize public access to the results of federally-funded research in which federal taxpayers invest. However, that federal investment is in the research, not the independent publication of the results. Publishers invest in the peer-reviewed literature and other publications, adding significant value that contributes to scientific advancement and the U.S. economy. Research-funding U.S. agencies should not compete with publishers, devalue their intellectual property, or require them to provide their products for free public access.

An excellent mechanism to ensure public access to materials that analyze and interpret research funded by the taxpayer is already partially implemented. By law every federally funded research project is required to provide a detailed final report. Some science funding agencies, such as the Department of Energy, make these reports freely available via the Web. At DOE, every final report is published online in the Information Bridge portal. In some ways, these reports are superior to the journal article in achieving the goal of public access to federally-funded research results. They are often available earlier than any journal article, if there even is one, and contain significantly more detail and information than the peer-reviewed literature. They report on both positive and negative results, and contain additional process details that are not available elsewhere. These reports are an underutilized resource that the taxpayer has directly paid for, as opposed to journal articles, and are available for all projects as required by the Federal Acquisition Regulation. Developing a sustainable, appropriate, government wide policy regarding public access to these required final research reports would solve the access problem.

Other agencies such as NSF are exploring alternate means of providing public access to researcher-supplied reports. NSF instituted "Project Outcomes Report for the General Public (POR)" in response to Section 7010 of the America COMPETES Act, which required that "all final project reports and citations of published research documents resulting from research funded in whole, or in part, by the Foundation, are made available to the public in a timely manner and in electronic form through the Foundation's Website." For several years, publishers have proposed working with authors to develop short abstracts for a lay audience to accompany each research report, and the NSF project is a step in the right direction.

Additionally, agencies should support voluntary efforts to enable people outside the traditional circles of scholarly research to access the full peer-reviewed version of record when necessary. These include collaborations between publishers and NIH such as the Emergency Access

Initiative, international collaborations such as Research4Life, and collaborative private-sector initiatives such as patientINFORM, which are expanding access and advancing research without mandates. Other voluntary approaches could be to allow researchers to fund immediate open access to published articles where such options are available. Such approaches would ensure the sustainability of the publishing enterprise and researcher choice.

In short, agencies should seek productive and mutually beneficial projects and partnerships that ensure greater availability of both taxpayer-funded research directly from the government and peer-reviewed, value-added publisher content. For example, publishers are ready to partner with Federal agencies to provide easy links between progress reports detailing research results, perhaps including lay summaries, and the peer-reviewed version of record, including complete access to the abstract or summary. Such projects would result in interoperability between funding agencies and publisher content, ensuring more timely and complete availability of scientific communication related to federally-funded research, as well as better reporting on the results of taxpayer funding for research. Together with existing infrastructure such as the Department of Commerce NTIS and the Department of Energy's science.gov site, and linked with metadata initiatives mentioned above, the posting of research reports provides a cost-effective model to expand access.

(7) Besides scholarly journal articles, should other types of peer-reviewed publications resulting from federally funded research, such as book chapters and conference proceedings, be covered by these public access policies?

Like scholarly journals and the articles they contain, peer-reviewed publications in the form of book chapters or conference proceedings, cannot be considered the "result of" federally-funded research in any sense that would justify the assertion of control over their content or distribution by the Federal Government based on its funding of the research involved. Such publications may describe, explain, analyze and interpret federally-funded research, but they have been produced for publication through extensive pre-publication screening, editing, and style processes, including peer review, that are arranged, conducted and funded by the publisher, not the Federal Government. In short, it is inaccurate to refer to such publications, whether peer-reviewed or not, as the "result" of federally-funded research in order to justify any assertion of Federal Government authority over their content or distribution.

Publications add value to the researcher and scientific community and therefore should not be taken without the copyright owner's permission and appropriate compensation. Publishers invest in these other types of content used by researchers, often by conceptualizing the project, commissioning the content and investing heavily in its development. Government-mandated access to books, proceedings or other such materials published by a nongovernmental entity at its own initiative and expense is an expropriation of private property. As discussed in other sections of this submission, the Federal Government should work in collaboration with publishers and other stakeholders to develop public access policies that will support scientific advancement and innovation to benefit scholarship and economic progress, regardless of the

form the publication may take.

(8) What is the appropriate embargo period after publication before the public is granted free access to the full content of peer reviewed scholarly publications resulting from federally funded research? Please describe the empirical basis for the recommended embargo period. Analyses that weigh public and private benefits and account for external market factors, such as competition, price changes, library budgets, and other factors, will be particularly useful. Are there evidence-based arguments that can be made that the delay period should be different for specific disciplines or types of publications?

For accepted and peer-reviewed author manuscripts and final, published journal articles, both of which publishers have heavily invested in, publishers should be able to determine the distribution models, including the time, if any, at which the final peer-reviewed manuscript or final published article are made freely available. As noted earlier, peer-reviewed papers are not the direct result of the expenditure of taxpayer funds; instead, they result from significant publisher investments. The ability to recoup those investments incentivizes and enables innovation, infrastructure development (including archives and metadata), and further publishing. For example, rapid innovation in the publishing industry has dramatically improved functionality and efficiency for doctors and researchers, who can now perform complex searches of journals, immediately retrieve and print full text articles, link instantly to other cited articles, export text to other databases and programs and receive e-mail alerts when new journal issues are released. Publisher investments in innovation and digitization have significantly improved productivity in science and science education and advanced interoperability and interdisciplinary research.

Any embargo period is a dramatic shortening of the period of copyright protection afforded all publishers, and likely to significantly impact publishers' ability to add value and innovate. There is, therefore, no "appropriate" mandatory embargo period. Additionally, a "one-size fits all" approach fails to recognize the diversity of scholarly publication and practices within different research communities, disciplines, and even sub-fields. A 2000 study published by the Special Libraries Association found that, for the life sciences, 60% of an article's lifetime usage takes place in the first year after publication.²³ That leaves 40% of the value of an article lost when it is made freely available to the public at twelve months. On the other hand, the American Psychological Association has noted that, for its journals, only 15% of the value of an article is recouped after the first year. An analysis of the mathematics literature in 2009 by the American Mathematical Society found that only 10% of the citations in the literature were to articles published in the previous three years combined.²⁴

In short, even with embargo periods, access mandates risk significant harm to the scientific enterprise and the peer-reviewed publishing process on which it depends. A study of journal publishing in the humanities and social sciences concludes that, given the comparatively long

²³ *Towards Electronic Journals* by Carol Tenopir and Donald King; Special Libraries Association; pp 188-189.

²⁴ See page 28 of the [final report](#) of a February 2011 MSRI Workshop on Mathematics Journals.

life of articles in those fields, the imposition of embargo periods that are being adopted for biomedical journals could threaten the sustainability of humanities and social science journals.²⁵ Similarly, a 2006 Publishing Research Consortium (PRC) study found that librarians reported a significant likelihood of cancelling scientific journal subscriptions if the content is available for free, even with embargo periods.²⁶ Given the importance of subscriptions to sustaining journal publishing and publishers' essential role in ensuring the integrity, dissemination and preservation of the world's scientific, technical and medical information, there is no appropriate embargo period to justify an access mandate.

Conclusion

When considering its directive to coordinate federal agencies' role in ensuring public access to the results of federally-funded research, OSTP should recognize the continued value of publisher activities, the copyright guarantees they have under U.S. and international law, and the history of innovation enabled by the ability of content providers to seek and receive a return on their investments. Federal agencies must take care to avoid undermining the critical infrastructure that supports scholarly communication. Any government-imposed mandate will face particular difficulties in adjusting to the rapid pace of change in the publishing industry. Journal publishers specifically have spurred scientific and technological innovation for decades through numerous industry-led changes in media, as well as production and delivery mechanisms. Additionally, not-for-profit and commercial journal publishers invest hundreds of millions of dollars every year in the peer review, editing, disseminating and archiving of scholarly and scientific articles, as well as in creating unique journal brands and identities on which researchers and funders alike rely to make critically important personal and professional judgments. Public access policies should not eliminate or hinder the ability of publishers to recoup these costs.

Any approach to improving public access should firmly support the transparency, participation and collaboration pillars of an effective and open government. This can be a model similar to the NSF approach, as enacted in the America COMPETES Act, whereby federal agencies provide specific content for public review, or it can take a broader approach of publishing the final research reports that taxpayers already fund as part of any project of federally-funded research. It should not include an expropriation of intellectual property that is independently produced to describe, explain, analyze and document that research for the public record.

AAP/PSP, the Coalition, and their members stand ready to work in partnership with the Federal Government and its research-funding agencies toward shared goals of increasing the

²⁵ "The Future of Scholarly Journals Publishing Among Social Science and Humanities Associations," Report on a study funded by a Planning Grant from the Andrew W. Mellon Foundation (February 2009), available at: <http://www.nhalliance.org/bm~doc/hssreport.pdf>

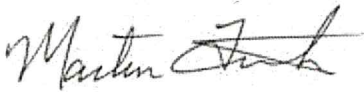
²⁶ Publishing Research Consortium Report "Self-Archiving and Journal Subscriptions: Co-existence or Competition" (July 2006). Accessible at http://www.publishingresearch.org.uk/documents/Self-archiving_report.pdf.

dissemination of research discoveries, improving access to published scholarly works, and advancing science and the U.S. economy.

Sincerely,



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